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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/615,317
Filing Date: July 08, 2003
Appellant(s): STAM ET AL.

James E. Schultz, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 25 September 2006 appealing from the Office action mailed 27 April 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

US 6,552,342 B2 Holz *et al.* 4-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 26-27, 32-38 and 41-46 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 26, the claim as amended includes a limitation wherein the "system is capable of distinguishing vehicular (sic) light source from non-vehicular light sources." The nature of this limitation is unclear.

The examiner notes that while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. See MPEP 2114. In this case, however, the limitations are rejected as indefinite because it is unclear what, if any, structure is suggested or implied by the recited capability. Since the structural limitations responsible for the claimed capability are unclear, the examiner considers the claims to be indefinite. Additionally, since it would be improper to speculate on what limitations might be responsible for the claimed capability, the examiner has considered the limitation as not implying any structural limitation.

The remaining claims are indefinite on the basis of their dependency.

2. Claims 26-27, 33, 35-38, 41 and 44-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Holz et al. (US 6,552,342 B2).

Regarding claim 26, Holz discloses (Fig. 1) a vehicular vision system, comprising an image sensor (3) and a light source (2), said light source is configured to emit light rays in the non-visible spectrum (col. 3, lines 27-30) to illuminate objects within a scene

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external to a controlled vehicle beyond an exterior surface of a windshield (see generally Fig. 1), wherein said light source is configured to operate in synchronous relationship with acquisition of images from said image sensor (col. 3, lines 56-61). As best understood, *Holz* discloses that the system is capable of distinguishing vehicular from non-vehicular light sources (i.e., the system checks whether data in the video image is glare from an oncoming laser headlight -- col. 4, lines 26-28; and col. 2, lines 50-54).

Regarding claim 27, *Holz* discloses that the vehicular vision system may be configured for use in obstacle detection (see generally col. 1, lines 9-21).

Regarding claim 33, *Holz* discloses that the light source is a narrow band emitter (col. 4, lines 7-9).

Regarding claim 35, *Holz* discloses that the light source emits in the range from approximately 780nm to approximately 1100nm (col. 3, lines 28-30 and col. 4, lines 58-61).

Regarding claim 36, *Holz* discloses that the light source is pulsed with momentary energy levels that exceed a one hundred percent duty cycle (see generally Fig. 2 comparing pulsed laser and continuous (i.e., one hundred percent duty cycle) laser).

Regarding claim 37 and 38, *Holz* discloses that the image sensor further comprising a narrow band pass spectral filter (F) placed between said scene and said image sensor (see generally fig. 4; col. 4, lines 22-24).

Regarding claim 41, *Holz* discloses that the light source is a near infrared laser (col. 3, lines 27-30).

Regarding claim 44, *Holz* discloses that the in some embodiments the spectral filter may be a movable shutter (filter wheel) (col. 4, lines 58-61).

Regarding claim 45, *Holz* discloses that the vehicular vision system may be configured for use in obstacle detection (see generally col. 1, lines 9-21).

Regarding claim 46, *Holz* discloses that the spectral filter located between said image sensor and the scene is configured to block light rays other than the predominant spectral band of the light rays emitted by the source (col. 4, lines 22-24 and 58-63).

3. Claims 32, 34, 42-43 and are rejected under 35 U.S.C. 103(a) as being unpatentable over *Holz*.

Regarding claim 32 and 34, although *Holz* discloses that the light source is preferably a laser diode source, those skilled in the art appreciate that the use of a wide variety of sources including both broadband sources including a filter and narrow band sources such as LEDs are well known and viewed as functionally equivalent light sources for use in vehicle vision systems, which, and absent some degree of criticality, would have been a matter of routine design choice within the skill of a person of ordinary skill in the art depending on the needs of the particular application.

Regarding claims 42-43, although *Holz* discloses that the light source is preferably a laser diode source, those skilled in the art appreciate that the use of a wide variety of sources are well known in the art including for example discharge type sources such as high intensity discharge lamps. Those skilled in the art additionally

appreciate that such sources typically include an AC ballast configured to strike an arc with high intensity. It would be obvious to synchronize such arc with the image sensor since *Holz* discloses that the source is synchronized with the image sensor (see claim 26 above).

(10) Response to Argument

A. The references

1. US Patent No. 6,552,342 to Holz *et al.*

The examiner generally agrees with what appellant argues that the *Holz* reference discloses, but does not consider such to be the totality of what the reference discloses.

B. Legal considerations

1. The rejection of claims 26, 27, 32-38 and 41-46 under 35 U.S.C. § 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellant regards as the invention.

a. Claim 26

Regarding applicant's argument that the examiner has interpreted MPEP §2114 as the totalitarian statement regarding functional limitations, the examiner disagrees. The reference to MPEP § 2114 is merely for support to the examiner's assertion of the well-known proposition that apparatus claims must be evaluated on the basis of their structure, not necessarily on the basis of their capabilities. The examiner is well aware of other MPEP sections and related

case law suggested by applicant (citing MPEP § 2131, related Federal Circuit case law, and MPEP 2173.05(g)) dealing with functional limitations.

Regarding applicant's general assertion that claim 26, when considered in light of paragraphs [0033-0036], [0048], [0051] and [0055], and taken as a whole is definite and distinctly claims the subject matter, the examiner disagrees.

While the examiner considers the asserted capability of distinguishing vehicular from non-vehicular sources to be clear enough, the specific structure implied by the asserted capability is not so clear as to allow for a person of ordinary skill in the art to interpret the metes and bounds of the claim so as to avoid infringement.

The lack of clarity regarding the necessary structure for allowing the recited capability is best understood by comparing original claim 26 (where there were no 35 U.S.C. §112 issues) with that of the amended claim. As presented in response to the non-final rejection, claim 26 reads:

26, (currently amended) A vehicular vision system, comprising:

an image sensor and a light source, said light source is configured to emit light rays in the non-visible spectrum to illuminate objects within a scene external to a controlled vehicle beyond an exterior surface of a windshield, wherein said light source is configured to operate in synchronous relationship with acquisition of images from said image sensor, the vision system being capable of distinguishing vehicular light source from non-vehicular light sources.

From the above, it is clear that the only difference between the original claim and the claim as currently presented is that of the recited capability. Since there are no newly recited elements, one skilled in the art would consider that any difference between the original claim and the amended claims resides solely in the structure *implied* by the newly recited capability, yet appellant has not provided any indication of what actual structure is necessarily implied by the claim limitation so as to allow ordinary skill in the art to interpret the metes and bounds of the claim so as to avoid infringement.

Applicant's referral to paragraph [0055] of the disclosure is also of little help in ascertaining the exact nature of any structure implied by the recited capability. Applicant suggests that paragraph [0055] describes element (d) (i.e., a vision system being capable of distinguishing vehicular light source (sic) from non-vehicular light sources), but this paragraph is concerned with the dynamic range of the vision system so as to be capable of distinguishing on-coming vehicular headlamps and distant vehicular tail lamps. The paragraph also mentions that in order to distinguish vehicular lights from other sources, such as sign reflections, a measure of the light sources brightness is needed, but the paragraph provides no indication of how to measure the light sources brightness, nor how one might distinguish a vehicular and a non-vehicular light source from among two equally bright light sources.

It is also noted that while the paragraph further mentions that a high dynamic range image system allows for a single image to be acquired and

analyzed, there is no suggestion that a high dynamic range image sensor, or even a single image, for that matter, is a necessary element for distinguishing vehicular light sources from non-vehicular light sources, and one skilled in the art would not necessarily recognize the recited capability as implying that the image sensor is one capable of acquiring a high dynamic range image.

Regardless of the implication of paragraph [0055], applicant's disclosure at paragraph [0033] indicates that while one specific high dynamic range sensor described in an incorporated reference is preferred, various other image sensing technologies such as CMOS and CCD image sensors could be used, such disclosure suggesting either that such technologies are inherently capable of high dynamic range, or that high dynamic range is not a critical element of the system. In either case, there is no clear implication that the capability to distinguish vehicular light sources from other sources necessarily requires the use of either a high dynamic range sensor, or even any specific type of sensor.

b-o. Claims 27, 33, 35, 36, 37, 38, 41, 42, 43, 44, 45 and 46

The listed claims are all dependent on claim 26 and their definiteness or lack thereof is considered to rise or fall on the basis of claim 26.

2. The rejection of claims 26-27, 33, 35-38, 41 and 44-46 under 35 U.S.C § 102 (e) as being anticipated by *Holz*.

a. Claim 26

Appellant's sole argument is that *Holz* has absolutely no teaching, suggestion or motivation for distinguishing vehicular light sources from non-vehicular light sources.

The examiner disagrees.

The Examiner's First Response

As a preliminary matter, the examiner notes that in accordance with MPEP §2173.06, there are at least two approaches to the examination of an indefinite claim relative to the prior art.

The second approach, and the one not taken by the examiner, applies where there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of a claim. In such case, it would not be proper to reject such a claim on the basis of prior art. As stated in *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection under 35 U.S.C. 103 [and presumably 35 U.S.C. 102] should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims.

While the examiner did not follow this approach, it is now clear, at least from the examiner's perspective, that there is considerable confusion and uncertainty as to the proper interpretation of the claim, and this is probably the approach that should have been taken.

Regardless, the first approach suggested by MPEP §2173.06, and the one taken by the examiner, applies when the degree of uncertainty is not great, and

where the claim is subject to more than one interpretation and at least one interpretation would render the claim unpatentable over the prior art. In this case, the appropriate course of action would be for the examiner to enter two rejections: (A) a rejection based on indefiniteness under 35 U.S.C. 112, second paragraph; and (B) a rejection over the prior art based on the interpretation of the claims which renders the prior art applicable. See, e.g., *Ex parte Ionescu*, 222 USPQ 537 (Bd. App. 1984). When making a rejection over prior art in these circumstances, the examiner is directed to point out how the claim is being interpreted. In this case, the examiner has interpreted the limitation at issue (i.e. the recited capability) as not requiring any new limitations that would distinguish the recited claim from the cited prior art. This seems reasonable in view of the fact that, as noted above, the claim as amended after the first action included no newly recited elements, and applicant did not indicate any structure implied by the newly recited capability. While the appellant may not completely agree with this interpretation, it is certainly at least one reasonable and proper interpretation.

Since the approach taken by the examiner is sanctioned by the MPEP, and applicant always has the possibility to amend, it is urged by the examiner that the Board not second-guess the examiner's interpretation affirm the examiner's interpretation that the recited capability does not necessarily imply any new or different structure than that already recited in the claims, and therefore does not distinguish the recited claim from the prior art.

In such case, consistent with MPEP § 2112.02, the claimed and prior art products being identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Having met the burden of establishing a *prima facie* case, it is up to applicant to present evidence that the prior art products do not necessarily possess the characteristics of the claimed product. See *In re Best*, 562 F.2d at 1255, 195 USPQ at 433. See also *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In this case however, applicant has presented no evidence tending to show that the prior art does not possess the structure implied by the recited capability.

Regardless of the Board's decision concerning the examiner's interpretation of the implication of the recited capability, the examiner further disagrees that *Holz* does not teach distinguishing vehicular light sources from non-vehicular light sources.

As noted in the rejection of claim 26 under 35 U.S.C. 102(e) above, *Holz* does teach distinguishing vehicular light sources from non-vehicular light sources. At col. 4, lines 26-29, *Holz* specifically discloses "a checking of whether a glare from a laser headlight is present occurs in that the data of the video

image itself is evaluated by an evaluation device.” Such checking clearly suggests the system is capable of determining a vehicular light source from a non-vehicular light source (i.e., light not from an oncoming laser headlight, but from sign reflections would, by default, be deemed non-vehicular). The examiner additionally notes that in accordance with *Holz*’s summary of the invention (col. 2, lines 51-53), stated to be “...a system for improvement of visibility in vehicles, which suppresses the emitted light from oncoming vehicles...”, there is a clear suggestion that light from non-vehicular sources (i.e., sign reflections) is not suppressed, and therefore, must be distinguished from the vehicular light. The fact that *Holz* actually performs additional treatment on the detected vehicular light (i.e., suppression) does not take away from the fact that *Holz* must first distinguish the light before suppressing it.

The examiner further notes that the CCD sensor disclosed by *Holz* (col. 3, lines 32-34) is viewed as *prima facie* capable of either high dynamic range, or at least a suitable alternative to a high dynamic range sensor in view of applicant’s disclosure at paragraph [0033] of the suitability of such sensors.

b-k. Claims 27, 33, 35, 36, 37, 38, 41, 44, 45 and 46

Applicant presents no new arguments regarding the rejected dependent claims.

3. The rejection of claims 32, 34 and 42-43 under 35 U.S.C § 103 (a) as being unpatentable over *Holz*.

a-d. Claim 32, 34, 42 and 43

Applicant presents no new arguments regarding the rejected dependent claims.

C. Conclusion

For the reasons set forth above, the examiner asks:

1. The rejection of the claims under 35 U.S.C. 112 be affirmed, and
2. The rejections under 35 U.S.C. 102 and 103 be affirmed on the basis that the prior art (*Holz*) does disclose the required capability.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

The examiner requests the opportunity to present arguments at the oral hearing.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

AJG 12 December 2006.



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